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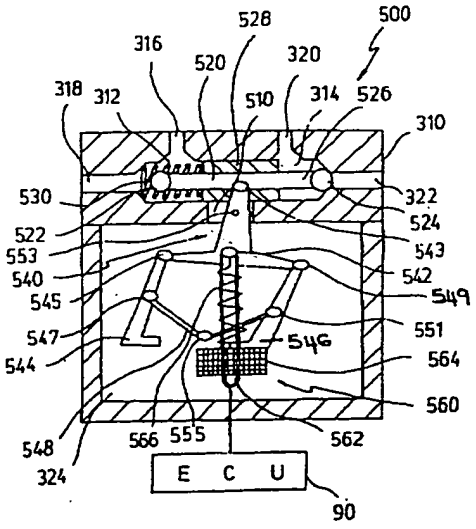
(54) Valve utilising shape memory alloys and an anti-lock brake system incorporating the valve

(57) A valve (500) has a pressure port (316) and an exhaust port (320) controlled by a reciprocable valve spool (520). A bias spring (530) maintains the valve spool (520) in its first position in which pressure port (316) is open and exhaust port (322) is closed. Where the valve (500) is used in an anti-lock braking system, in this first position brake fluid is flowed via an inlet (318) and bore (312) out of the pressure port (316) to pressurise a brake. An actuating unit (560) for moving the valve spool (520) comprises a series of pivoted links (542, 544, 546, 548) and an actuating shape memory alloy wire (562) connected to the first link (542) and to an actuating block (563) suspended from the third link (546). Application of electrical current to the wire (562) contracts it causing pivoting of the links and movement of the valve spool (520) to a second position in which the pressure port (316) is closed and the exhaust port (322) is open. The supply of pressuring fluid to the brake is thereby ceased, and fluid can be flowed from the brake via an inlet (320) and a bore (314) to the exhaust port (322) to release pressure from the brake. Removal of the electrical current from the wire (562) relaxes it and the bias spring (530) is able to restore the valve spool (520) to its first position.

FIG.7



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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 5750

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P,A	EP 0 614 033 A (PERLMAN MAIER ;BELL JAMES MICHAEL (CA); MARTIN RICHARD L (US); MCG) * column 2, line 11 - column 3, line 24; figures 1-3 *	1	B60T8/36 F16K31/02
A	EP 0 144 790 A (MATSUSHITA ELECTRIC IND CO LTD) * page 8, line 16 - page 12, line 8; figures 5,6 *	1	
D,A	US 5 211 371 A (COFFEE CURTIS L) * abstract; figure 1 *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B60T
F16K

Place of search	Date of completion of the search	Examiner
BERLIN	25 September 1997	Blurton, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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